

MANUFACTURE OF ORIENTED ARTICLE OF ULTRA-HIGH-MOLECULARPOLYETHYLENE

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Abstract of JP60189420

PURPOSE:To manufacture an oriented article of ultra-high-molecular polyethylene whose tensile strength and an elastic modulus are both high, by a method wherein specific paraffin wax is added to the ultra-high-molecular polyethylene, which is oriented through fusing and extruding.

CONSTITUTION:Paraffin wax whose fusing point is 40-120 deg.C and molecular weight is less than 2,000 is blended with ultra-high-molecular polyethylene (extreme viscosity is more than 5dl/g) at a ratio of 25:75, which is melted and kneaded within a screw extruder at the temperature of 180 deg.C of resin. Then the above molten article is extruded through the die for cooling and solidification. An obtained unoriented article is oriented at a ratio of orientation exceeding at least three times. As an obtained oriented article of the ultra-high-molecular polyethylene possesses high tensile strength, which is not obtainable through a conventional polyethylene oriented article, and a high elastic modulus, the oriented article can be used for various kinds of reinforcement materials for which lightweight properties are required.

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